

CLAIMS

1. A roller device (10) for displacing a load (1) in an essentially horizontal plane characterized in that it comprises at least one essentially horizontal table (21) to which the roller elements (23, 24) are attached, at least one rack (31) covering said table (21) equipped with openings (32, 33) located opposite said roller elements (23, 24), said rack (31) defining a plane contact surface (S) for supporting said load when it is static and said roller elements (23, 24) being located in a plane essentially parallel to said surface (S) and able to support said load when it is moving, said actuating means (40) being associated with at least one of said structures (21 or 31) to be movable relative to the other between at least a lower position and an upper position wherein the load is supported either by the rack (31) or by the table (21), in that said actuating means (40) is designed to displace the structure called the movable structure (21 or 31) at least in horizontal translation (Th) and in that said rack (31) comprises a lifting means (50) which cooperates with said roller elements (23, 24) on said table (21) so as to cause the structure called the movable structure (21 or 31) to move in vertical displacement (Tv) simultaneously with its horizontal displacement (Th).
2. A device according to claim 1 characterized in that the shape of the lifting means (50) is compatible with that of the roller element (23, 24) to form lifting ramps.
3. A device (10) according to claim 2 characterized in that said openings (32, 33) consist of lights defining at least a first zone (32a, 33a) which allows at least the tops of the roller elements (23, 24) to project, a second zone (32b, 33b) for covering the roller elements (23, 24) and an intermediate zone (32c, 33c) which together with roller elements (23, 24) forms the lifting ramps.
4. A device according to claim 3 characterized in that the second zone (32b, 33b) with

openings is designed to block the roller elements (23, 24) in said openings (32, 33) on the rack (31) in order to lock the position of said rack (31) relative to said table (21).

5. A device according to claim 3 characterized in that the roller elements are spherical balls (23) and the intermediate zone (32c) with openings (32) is generally elliptical in shape, converging toward the second zone (32b).

6. A device according to claim 3 characterized in that the roller elements are bi-conical rollers (24) and the intermediate zone (33c) with openings (33) is generally triangular in shape, converging toward the second zone (33b).

7. A device according to claims 5 or 6 characterized in that the first and second zones (32a, 33a, 32b, 33b) of the openings (32, 33) have transverse dimensions ranging respectively from 60 to 95% and from 10 to 45% of the diameter of the roller elements (23, 24).

8. A device according to claim 3 characterized in that the rack (31) is movable and associated with an actuation means (40) and the table (21) supporting the roller elements (23, 24) is fixed.

9. A device according to claim 8 characterized in that the actuating means (40) comprises at least one handle (41) moving in translation within a guide block (42) integral with the table (21) and oriented in an essentially perpendicular direction to the direction of horizontal displacement Th by the rack (31), said rack (31) comprising a guide groove (44) traversed by said handle (41) and angularly offset in relation to the guide block (42) so as to generate horizontal displacement of the rack (31).

10. A device according to claim 9 characterized in that said actuating means (40) comprises at least one locking element (45) for connecting the rack (31) to the table (21) in at least one

raised or lowered position.

11. A load handling platform comprising at least one roller device (10) for displacing a load (1) in a generally horizontal plane characterized in that it comprises at least one generally horizontal table (21) to which roller elements (23, 24) are attached, at least one rack (31) covering said table (21) having openings (32, 33) located opposite said roller elements (23, 24), said rack (31) defining a plane contact surface (S) capable of supporting said load when it is static and said roller elements (23, 24) being located in a plane generally parallel to said surface (S) and capable of supporting said load when it is moving, and an actuating means (40) associated with at least one of these structures (21 or 31) to be movable in relation to each other between at least a lower position and an upper position, wherein the load is supported either by the rack (31) or by the table (21), in that these actuating means (40) displace the structure called the movable structure (21 or 31) at least in horizontal translation (Th) and in that said rack (31) comprises lifting means (50) which cooperate with said roller elements (23, 24) on said table (21) so as to generate vertical displacement (Tv) by the structure called the movable structure (21 or 31) simultaneous with its horizontal displacement (Th).

12. A load handling apparatus according to claim 11 characterized in that the lifting means (50) has a shape that is compatible with the shape of the roller elements (23) to form lifting ramps.

13. A load handling apparatus according to claim 12 characterized in that said openings (32, 33) consist of lights defining at least a first zone (32a, 33a) that allows at least the tops of the roller elements (23, 24) to project, a second zone (32b, 33b) which covers the roller elements (23, 24), and an intermediate zone (32c, 33c) which forms, in combination with the roller elements (23, 24), said lifting ramps.